



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/635,640	08/07/2003	Takako Ozawa	Q76832	8806
23373	7590	11/23/2004	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			UHLIR, NIKOLAS J	
			ART UNIT	PAPER NUMBER
			1773	

DATE MAILED: 11/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/635,640

Applicant(s)

OZAWA ET AL.

Examiner

Nikolas J. Uhlir

Art Unit

1773

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 September 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

1. This office action is in response to the response dated 9/15/2004. The applicant's arguments have been fully considered but are not sufficient to overcome the prior art of record. However, the arguments persuaded the examiner to change the prior rejection of the claims based on the previously cited prior art.

Drawings

2. The examiner has considered the drawings dated 08/07/2003 and finds them to be acceptable.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishikawa (US2002/0034028A1) in view of Nishikawa (US2002/0051306A1).

5. For the purpose of clarity, the above-cited references are denoted as Nishikawa '028 and Nishikawa '306 respectively.

6. Claim 1 requires a master information carrier having on a surface thereof an irregularity pattern representing information to be transferred to a magnetic recording medium held in contact with the surface of the master information carrier, wherein the improvement comprises that the parts of the surface of the master information carrier

which is brought into contact with the magnetic recording medium have a center plane mean average surface roughness in the range of 0-3-10.0nm.

7. Regarding these limitations, Nishikawa '028 teaches a master information carrier that comprises an irregularity pattern (i.e. protrusion portions) representing data to be transferred to a slave medium by contact magnetic transfer (section 19). The substrate can be a metal or a resin material (sections 32 and 35). If the substrate is a metal, the depth of the irregularity pattern is 80-800nm, more preferably 150-600nm (section 32). If the substrate is a resin, then the depth of the irregularity pattern is 50-1000nm, more preferably 200-500nm (section 35). A magnetic layer is formed over the surface of the irregularity pattern (section 33) This magnetic layer is preferably 50-500nm thick, more preferably 150-400nm thick (section 33).

8. Nishikawa '028 fails to disclose the required the mean surface plane roughness required by claim 1.

9. However, Nishikawa '306 discloses that the mean surface roughness Ra of a magnetic master medium having grooves in its surfaces impacts the adsorption of force between the master and the slave medium, as well as the quality of the signal transfer from the master to the slave (section 28). Specifically, Nishikawa '306 teaches that the Ra of a master medium should be between 0.2nm-5nm (section 28). If Ra is less than 0.2nm, then adsorption force between the slave and the master is so high as to prevent the slave and master from being easily detached (section 28). If Ra is greater than 0.5nm, the distance between the master and the slave is too high and magnetic transfer between the master and the slave is impaired (section 28). Nishikawa '306 teaches

specific embodiments wherein a master medium having groove in its surface exhibits satisfactory performance when the surface roughness Ra is 0.8nm, 2nm, and 4.6nm (table 1).

10. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to form the master medium taught by Nishikawa '028 so as to have an average surface roughness Ra of 0.8nm or 2nm.

11. One would have been motivated to make this modification in view of the teaching in Nishikawa '306 that the roughness of a master medium impacts adsorption force and transfer quality. One would have specifically been motivated to control the roughness to 0.8nm or 2nm in view of the teaching in Nishikawa '306 that a master medium having grooves (similar to the irregularity pattern taught by Nishikawa '028) exhibits satisfactory performance with these specific roughness values.

12. The examiner acknowledges that the Nishikawa references above do not expressly teach the center plane mean surface roughness (SRa) required by the instant claims. Further, the examiner acknowledges that center plane mean surface roughness (SRa) and mean surface roughness (Ra) are not the same. However, it is unclear to the examiner just how different SRa and Ra are from one another. Ultimately, SRa and Ra are measurements of surface roughness. The only difference between Ra and SRa appears to be the manner in which the surface roughness is measured. However, it is not clear to the examiner that a master medium having an Ra of 0.8nm or 2nm (such as that suggested by the Nishikawa references) would not necessarily possess the claimed center plane mean surface roughness. Bearing this and the substantial similarities in

Art Unit: 1773

structure between the Nishikawa inventions and the claimed invention (indeed the cited prior art discloses a master medium which is identical in every respect to the claimed invention save for the surface roughness) in mind, it is the examiners position that a master medium having an Ra of 0.8nm or 2nm will necessarily have a SRa within the claimed range. Currently, there is no evidence of record to refute this position. The applicant is respectfully directed to the examiners not below for a discussion of the type of evidence the examiner would find persuasive in overcoming this assertion.

13. The limitations of claims 2-13 are met as set forth above.

Examiners Note

14. Without wishing to direct the applicant in any manner, the examiner notes that the most persuasive evidence that the applicant could present to overcome the examiners inherency argument above would be to provide an example of a magnetic thin film that meets the Ra of the Nishikawa references but does not meet the SRa range required by the instant claims.

15. Alternatively, if applicant can point to evidence establishing the criticality of the claimed SRa in an argument, that argument *may* also be persuasive.

Response to Arguments

16. Applicant's arguments filed 09/15/2004 have been fully considered but they are not persuasive.

17. Applicant's primary argument is related to the fact that Ra and SRa are fundamentally different concepts. The examiner agrees, but this argument is not sufficient to overcome the prior art of record as clarified above. Specifically, it is not

clear that a prior art magnetic master medium having an Ra within the applicants claimed range would not also necessarily possess an SRa within the claimed range.

The issue is that it is not clear just how different SRa and Ra are. Ultimately Ra and SRa are measurements of the non-uniformity of a surface. While SRa and Ra may indeed be wildly different from one another, the examiner is hesitant to pass this case to issue without clear evidence on the record establishing that this is indeed the case.

18. Applicant then argues that Nishikawa '306 is different from that of the instant invention because Nishikawa '306 teaches providing only the data areas with the average surface roughness Ra within the claimed range, whereas the instant invention requires the overall surface parts of the master that are to be brought into contact with the slave exhibit the claimed SRa. This argument is an attack on the teaching of Nishikawa '306 individually. However, the rejection of the instant claims is based on a combination of Nishikawa '028 with Nishikawa '306. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Further, the examiner acknowledges that Nishikawa '306 does indeed teach controlling the Ra of only the data areas. However, the data areas of Nishikawa '306 are those areas of the master having a magnetic coating. Bearing this in mind, Nishikawa '028 teaches a master medium having a substantially identical (except for the claimed SRa) structure as that of the instantly claimed invention. This is evidenced by the comparison of figure 1b of

Nishikawa '028 and figure 2 of the instant invention. Specifically, Nishikawa '028 teaches a master medium having a substrate with an array of pits and grooves on its surface and a magnetic layer continuously covering the pits and groove. In view of the teaching Nishikawa '306 that the data areas should have a specific Ra, and the fact that the Data areas of Nishikawa '306 are those areas having a magnetic layer, the examiner maintains that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Nishikawa '028 per the teachings of Nishikawa '306.

19. Applicant's final argument is that the Nishikawa '306 grooves are not in any way related to the irregularity pattern recited in claim 1, as the Grooves in Nishikawa '306 only function to prevent the generation of air gaps. This argument is unpersuasive. First, the examiner only compared the grooves of Nishikawa '306 to the irregularity pattern of Nishikawa '028, not the instant invention. Thus, applicant's comparison of the grooves of Nishikawa '306 to the instant invention is wholly unrelated to the argument presented by the examiner. Second, insofar as applicant's argument pertains to the examiners comparison of the grooves of Nishikawa '306 and the irregularity pattern of Nishikawa '028, it is unpersuasive. The irregularity pattern of Nishikawa '028 is a pattern of protrusion portions and depression portions. The grooves of Nishikawa '306 result in a pattern of protrusion portions and depression portions. Thus, it is unclear to the examiner how the grooves of Nishikawa '306 are structurally different from the protrusion/depression pattern used in Nishikawa '028. Accordingly, this argument is unpersuasive.

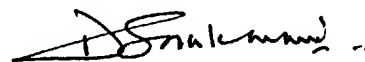
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nikolas J. Uhler whose telephone number is 571-272-1517. The examiner can normally be reached on Mon-Fri 7:30 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul J. Thibodeau can be reached on 571-272-1516. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


nju


D. S. NAKARANI
PRIMARIAL EXAMINER